

Title:

Propulsion System Test

Revision:

A, 1

Revision Date:01/19/2010

Process Description/Objective:

This process describes the infrastructure processes and tasks required from initial customer contact through final product delivery to conduct a rocket propulsion system or component test in the 300 or 400 test areas.

Process Steward(s):

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 - Michael Mike G. Anderson
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Interfacing Processes

- Customer Surveys
- Data Pack Assembly
- Return Customer Supplied Product
- Test Reports and WSTF Documentation
- Waste Management
- Task and Delivery Order
- Engineering and Construction
- System Safety Analysis
- Reimbursable
- Discrepancy Record
- Component Services
- Calibration
- Engineering and Construction
- Purchase Request-Purchase Order

- Photo Lab/Motion Picture/Video
- Propulsion Verification and Validation
- Safety and Readiness Review
- Test Preparation Sheet
- Waste Management
- Inspection

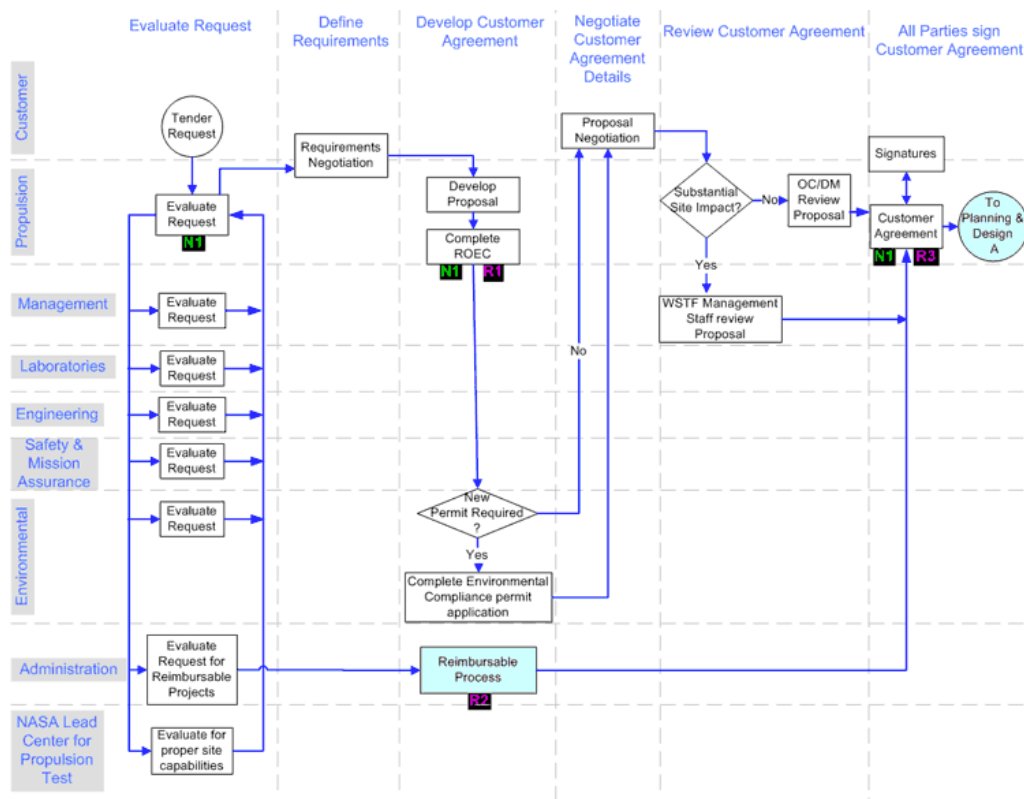
Input Requirements:

Customer Requirements

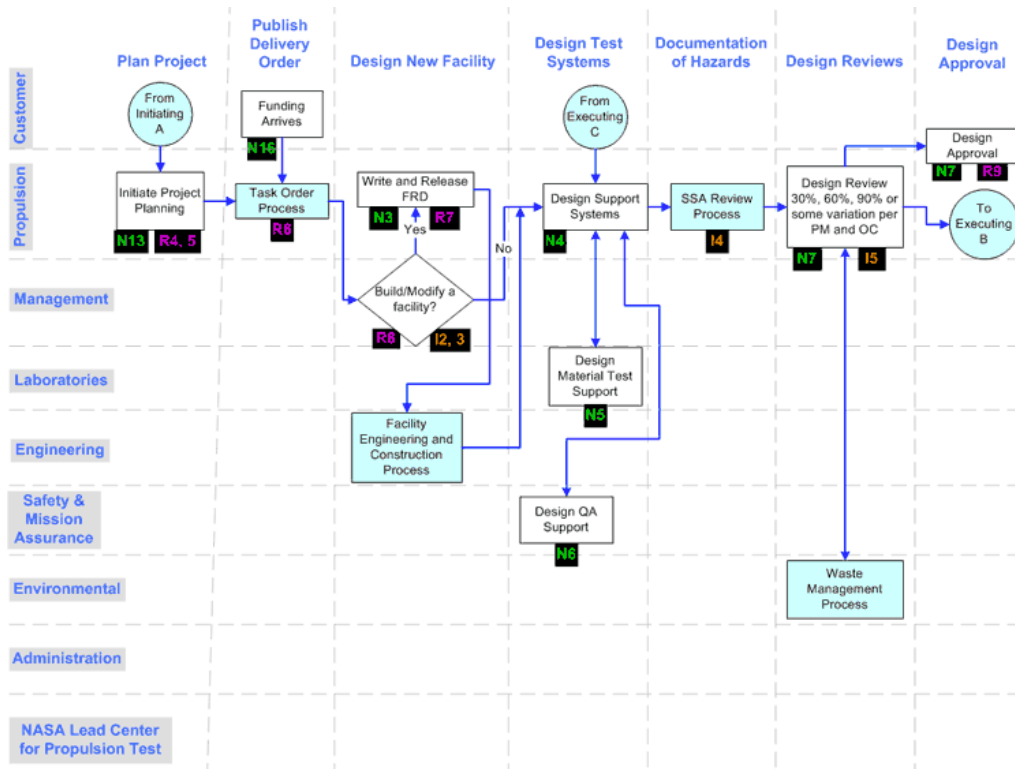
Output Requirements:

Defined in the Customer agreement

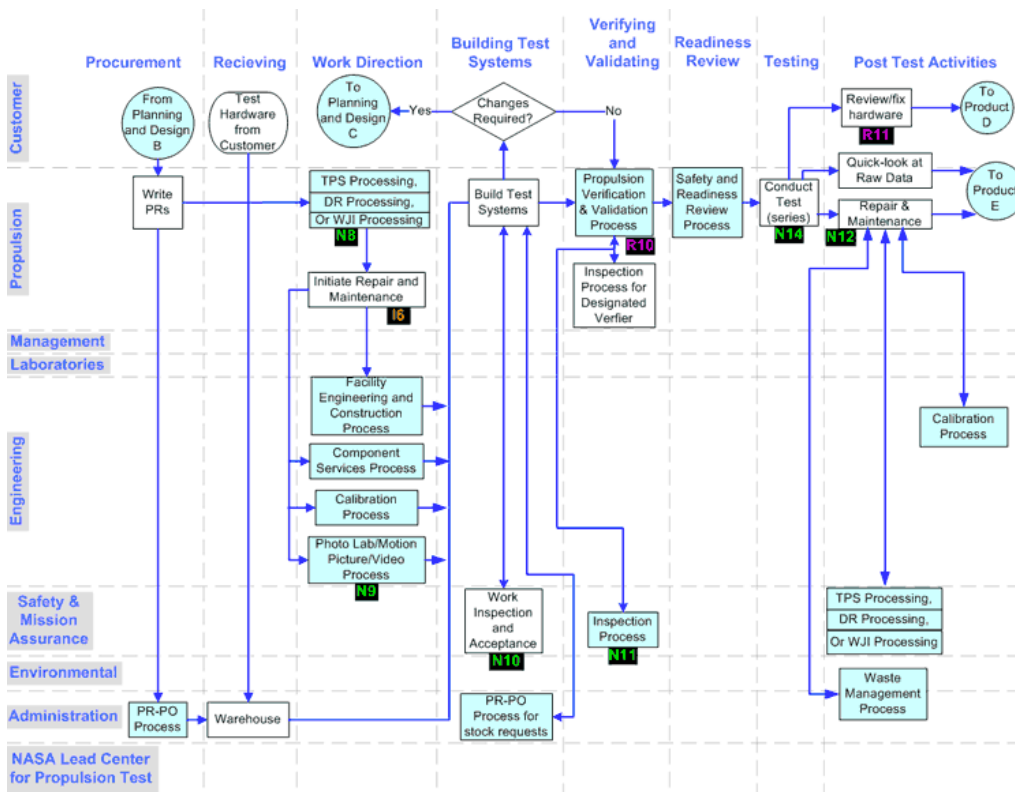
Initiating



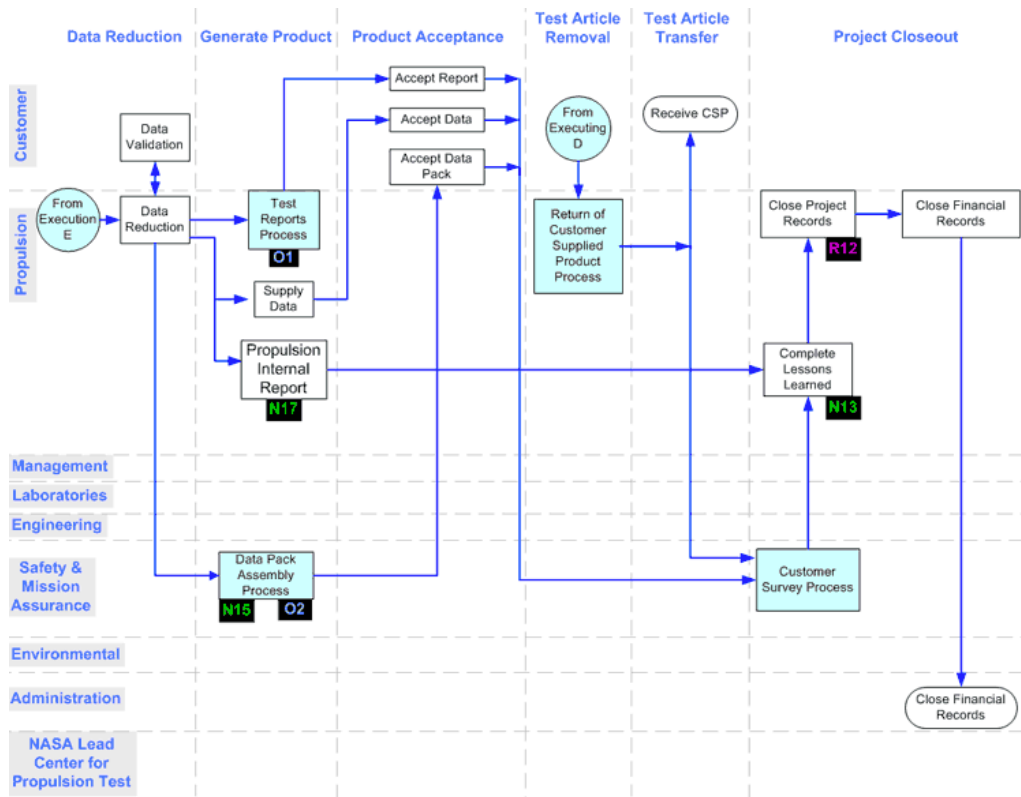
Planning and Design



Execution



Product



NOTES

Note 1

Other request evaluations are as required per the *Customer Agreement Review* (WSP 3-0001). A preliminary project risk analysis is completed with this task.

The project managers are empowered to establish the threshold at which routine customer communication becomes a complaint, and are accountable to management for the customer relationship. *Project Management* (WSP09-0014) and *Customer Survey Process* (WSI 01-SW-0001) discuss processing customer input in general.

Note 3

Refer to Documenting Project Requirements (WSI PROP-0011). The project manager or Office Chief may direct Propulsion personnel to design to the FRD without Facility Engineering support

Note 4

Refer to:

- *Design Control* (WSP 4-0001)
- *"Safety and Readiness Reviews"* (WSI 4-SW-0001)
- *Hazard Recognition and Control* (WSI 4-SW-0002)
- *System Safety Analysis* (WSI 4-SW-0003)

Note 5

Refer to:

- *Chemical Hygiene* (WSI 25-SW-0011)
- Material Compatibility contact Chem. Lab Supervisor Labs WJI

Note 6

Refer to:

- *Quality Inspection/Verification* (WSP 2-0002)
- *"Designated Verifier Program"*, (WSI 2-SW-0002)

Note 7

Refer to:

- *Design Control* (WSP 4-0001)

The design approval task and the three previous columns are iterative through final design approval.

Note 8

Refer to:

- *WSTF Job Instruction (WJI) Control* (WSI 5-SW-0004) for WJI processing

Note 9

Refer to

- *Requesting Work From the Engineering Department* (WSI 9-SW-0004)

Note 10

Refer to:

- *Quality Inspection and Verification Planning* (WSI 2-SW-0001)

Note 11

Refer to:

- *"Welding Requirements and Qualification of WSTF Welding Processes and Personnel"* (WSI 9-SW-0008)
- *In Process Control for Flight Welding Applications* (WSI 9-SW-0009)
- *Certification and Recertification of Pressurized Oxygen Systems* (WSI 9-SW-0011)

Note 12

Refer to:

- *Facility System/Equipment Operation and Maintenance* (WSI PROP-0020)

Note 13

Refer to:

- "Project Management" (WSP 9-0014)

Monthly reviews will include:

- project objective;
- delivery order number;
- delivery order value;
- delivery order expenditures;
- delivery order end date;
- project manager;
- project leader;
- customer identification;
- review date;
- date of last review;
- project highlights;
- project lowlights;
- earned value plot and table;
- budget status;
- last 30 days summary;
- next 30 days summary;
- potential risks or concerns;
- and action items.

Note 13

Refer to *Project Management* (WSP 9-0014)

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- delivery order number;
- delivery order value;
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- earned value plot and table;
- budget status;
- last 30 days summary;
- next 30 days summary;
- potential risks or concerns;
- and action items.

Note 14

In a series of tests, various tasks in the following column may be included within this task.

Note 15

A Data Pack requirement is generally specified in the customer agreement.

Note 16

At least partial funding must be in a WSTF account prior to approval of the delivery order.

Note 17

Distribution of the Propulsion Internal Report will include one copy to the Audit and Corrective Action Coordinator

RECORDS

Record 1

Record of Environmental Consideration (WSTF Form 423)

Record 2

Customer Funding Authorization - Letter or Memorandum of Record

Record 3

Customer Agreement - Letter or Memorandum of Record

Record 4

Project Plan - For all Type 1 projects; recommended for other projects.

Record 5

Project File

Record 6

Task Order

Record 7

Facility Requirements Document

Record 8

Lessons Learned - For all Type 1 projects; recommended for other projects.

Record 9

Record of Approved Design -- Memo or *Test Preparation Sheet* (TPS) (WSTF Form 392)

Record 10

Verification and Validation Documentation - Memo or *Test Preparation Sheet* (TPS) (WSTF Form 392)

Record 11

Customer Property Lost/Damaged, etc. - *Discrepancy Report* (DR) (WSTF Form 447)

Record 12

Working Project Notebook -For all Type 1 projects; recommended for other projects.

IN PROCESS METRICS

In Process Metric 2

Periodic Project Status Reports - To be implemented for all Type 1 projects per *Project Management* WSP 9-0014, and may be required by the Project Manager for other projects.

In Process Metric 3

Periodic Cost and Work Performed Measurements used to perform the Earned Value Analysis for type 1 projects per *Project Management* (WSP 9-0014).

In Process Metric 4

Risk Factors: Developed from the Hazard Analysis, Failure Modes and Effects Analysis per *Hazard Recognition and Control* (WSI 4-SW-0002).

In Process Metric 6

Number of maintenance items per month past due.

In Process Metric 5

Number of Design Review Action Items and time each remains open. This provides a measure of the design team's thoroughness and responsiveness.

OUTPUT METRICS

OutPut Metric 1

On time delivery

OutPut Metric 2

Conformance to spec.

MSM DOCUMENTS

Customer Agreement Review (WSP-03-0001)

Documenting Project Requirements (WSI-PROP-0011)

Design Control (WSP-04-0001)

Hazard Recognition and Control (WSI-04-SW-0002)

Designated Verifier Program (WSI-02-SW-0002)

Chemical Hygiene (WSI-25-SW-0011)

WSTF Pressure Vessel And Pressurized Systems (PV/S) Program (WSP-09-0015)

Project Management (WSP-09-0014)

WSTF Job Instruction (WJI) Control (WSI-05-SW-0004)

Welding Requirements and Qualification of WSTF Welding Processes and Personnel (WSI-09-SW-0008)

In Process Control for Flight Welding Applications (WSI-09-SW-0009)

Certification and Recertification of Pressurized Oxygen Systems (WSI-09-SW-0011)

Facility System/Equipment Operation and Maintenance (WSI-PROP-0020)

Project Management (WSP-09-0014)

Management System Verification (WSP-02-0002)

WSTF Job Instruction (WJI) Control (WSI-05-SW-0004)

Facility System/Equipment Operation and Maintenance (WSI-PROP-0020)

Welding Requirements and Qualification of WSTF Welding Processes and Personnel (WSI-09-SW-0008)

REFERENCES